# DROPLETS FROM THE PLANKTON NET XXIII. THE PREDOMINANT TYPE OF *PHYSALIA* IN THE JAPANESE WATERS[1)]

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*With 1 Text-figure*

The dimorphism of *Physalia*, together with its biological significance, has been referred to repeatedly (WOODCOCK 1956, TOTTON and MACKIE 1960, EDWARDS 1966), and the distributions of respective forms in the North Pacific are discussed on the data gathered by the Vityaz in 1955–59 by SAVILOV (1961). He mentions that the *Physalia*-Left sailing is concentrated outside the anticyclonic circulation of the wind flows and is accumulated along the subarctic convergence, while the *Physalia*-Right sailing occurs most densely in the central area of the anticyclone and is condensed along the subtropical convergence.

*Physalia physalis* var. *utriculus* LA MARTINIERE is seen commonly along the Pacific coasts from the middle to the south of Japan. Sometimes in the summer season big swarms of it will be drifted to the bathing places and attack the soft skin of those enjoying the bathing; then it is blamed as "the electric nettling medusa". Nevertheless, it is not yet recorded formally which of the two types of *Physalia* is the assailant of such harm.

In the vicinity of Seto, some strandings of the swarm of *Physalia* are noted on the southerly coast after the continued south wind or on the northerly coast after the north wind which followed the continued south wind. I happened to collect physalias thus washed up twice last summer and once this June and examined which of the types was predominant in them. Before the last decade, it was very easy to find stranded physalias by its brilliant blue colour, but in these days man will be often deceived by so many blue cellophane and plastic pieces. In spite of such a trouble, I thought I swept some beach areas almost perfectly. Then, under the supposition that smaller and larger physalias are stranded similarly, the following data showing the ratio between the two types may be accepted valid for future analyses. I want to record here my hearty thanks to Mr. H. TANASE of the Laboratory Aquarium and Mr. Takasi TOKIOKA, Junior for information and help in collecting

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physalias, and also to Dr. R. BIERI for so effectual advices.

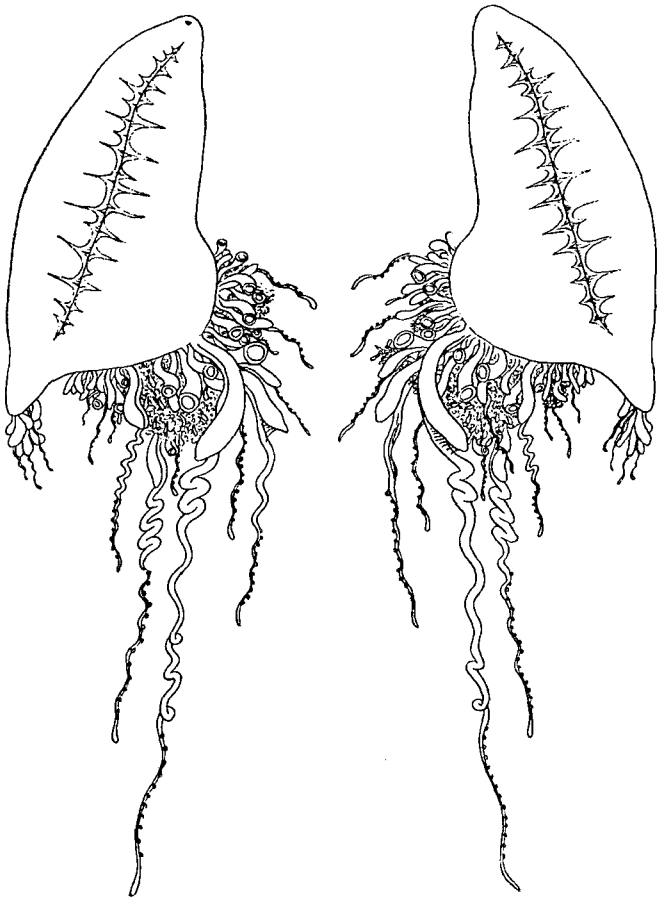

Fig. 1. Dimorphism of *Physalia*, shown schematically. Left···Right handed (Left sailing), right···Left handed (Right sailing).

(1) 172 (9–36 mm) colonies from the north beach near the Laboratory; August 22, 1968; after the north wind following the continued south wind. Pneumatophore length in mm.

Right handed (Left sailing).....171 colonies.

| <10 mm | 11–15 mm | 16–20 mm | 21–25 mm | 26–31 mm | 31 mm< |
|---|---|---|---|---|---|
| 2 | 30 | 66 | 51 | 17 | 5 |

Left handed (Right sailing).....1 colony (16 mm long), 0.58% of the total.

(2) 729 (4–25 mm) colonies from the north beach near the Laboratory; August 30,

1968; after the north wind which followed the continued south wind. Pneumatophore length in mm.
Right handed (L.s.).....676 colonies.

| <10 mm | 11–15 mm | 16–20 mm | 21–25 mm |
|---|---|---|---|
| 76 | 401 | 176 | 23 |

Left handed (R.s.).....52 colonies, 7.13% of the total.

| <10 mm | 11–15 mm | 16–20 mm | 21–25 mm |
|---|---|---|---|
| 5 | 25 | 17 | 5 |

Crest indiscernible.....1 colony (6 mm long).

(3) 39 (4.5–55 mm) colonies from the south beach near the Laboratory; June 26, 1969; after the stormy south wind. Pneumatophore length in mm.
Right handed (L.s.).....37 colonies.

| <10 mm | 11–15 mm | 16–20 mm | 21–25 mm | 26–30 mm | 31–35 mm | 36 mm< |
|---|---|---|---|---|---|---|
| 3 | 3 | 7 | 11 | 7 | 2 | 4 |

Left handed (R.s.).....2 colonies (17 and 55 mm respectively), 5.1% of the total.

As seen in the figures given above, physalias occurring along the Pacific coast of Japan are seemingly mostly right handed (L.s.). Similarly, in *Velella*, the left-type is much more dominant than the right type in the area referred to. Further details on *Velella* are to be given in a future note.

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